

1 What is claimed is:

2 1. A method for preparing carpet utilizing a polyurethane  
3 foam to anneal a secondary backing to a greige, having fibers  
4 attached to a primary backing, said process comprising:

5 (a) preparing polyurethane by introducing polyol from a  
6 first dedicated line and isocynate from a second dedicated line  
7 into a mixing head with a filler, a catalyst, and a gas to froth  
8 the ingredients;

9 (b) directing the frothed ingredients to a die head;

10 (c) applying said polyurethane ingredients to form a  
11 coating on greige;

12 (d) evening the distribution of the polyurethane  
13 ingredients substantially across the width of the greige;

14 (e) applying steam to the polyurethane coated greige to  
15 increase gel and blow reactions;

16 (f) contacting a secondary backing to the polyurethane;  
17 and

18 (g) passing the polyurethane coated greige through a  
19 gauging device to level the blown polyurethane.

20 2. The method of claim 1 wherein water is added to the  
21 ingredients in the mixing head at a rate of less than 3.0 parts  
22 per 100 parts of polyol.

1           3.    The method of claim 1 wherein the polyurethane foam  
2   has a weight of between about 6 ounces to about 40 ounces per  
3   square yard.

4           4.    The method of claim 1 wherein a filler is added to the  
5   mixing head at a rate of less than 250 parts of filler to 100  
6   parts of polyol.

7           5.    The method of claim 1 wherein the distribution of  
8   polyurethane ingredients substantially across the width of the  
9   greige is accomplished by use of at least one of a doctor blade,  
10   a roller, or an air knife.

11          6.    The method of claim 1 wherein the temperatures of the  
12   polyol and isocyanate are controlled before entering the mix  
13   head.

14          7.    The method of claim 1 wherein the mixing head is  
15   adjacent to the die head.

16          8.    The method of claim 1 wherein the mixing head is  
17   connected to a plurality of die heads by relatively short  
18   connecting tubes.

19          9.    The method of claim 8 wherein the short connecting  
20   tubes pass through a heat exchanger to alter the viscosity of  
21   the frothed ingredients.

22          10.   The method of claim 1 wherein a dispensing opening of  
23   the die head is adjustable.

1        11. The process of claim 1 wherein said greige is  
2 subjected to steam after both coating with polyurethane and  
3 contact with the secondary backing.

4        12. The process of claim 1 wherein filler is present in  
5 the polyurethane in a concentration of from about 0 to about 300  
6 parts per 100 parts of polyol.

7        13. The process of claim 1 wherein metallic or organic  
8 amine catalysts or a mixture thereof are introduced through a  
9 third dedicated line into said mixing head.

10       14. The process of claim 1 wherein a thermal rise of less  
11 than 30° F is observed.

12       15. The process of claim 1 wherein said polyurethane foam  
13 applied to said primary backing is flame retardant.

14       16. The process of claim 1 wherein said polyurethane  
15 applied to said primary backing contains 0.5 to 3 parts water  
16 per 100 parts of polyol.

17       17. A method for preparing carpet by annealing a secondary  
18 backing to a greige, having face fibers extending from a first  
19 side of a primary backing, said process comprising:

20       a) preparing polyurethane by introducing polyol from a  
21 first dedicated line and an isocyanate from a second dedicated  
22 line into a mixing head application through a die;

1           b) applying said polyurethane to a second opposed side of  
2 the primary backing of said greige to form a tacky polyurethane-  
3 coated greige;

4           c) applying steam to the polyurethane coated primary  
5 backing; and

6           d) contacting said secondary backing with the polyurethane-  
7 coated greige to form a carpet.

8           18. The process of claim 17 wherein said polyurethane is  
9 applied to said primary backing at an area concentration of  
10 about 6 to about 40 ounces per square yard

11           19. The process of claim 17 wherein the filler is present  
12 in said polyurethane at a concentration of from about 0 to about  
13 300 parts per 100 parts of polyol.

14           20. The process of claim 17 wherein metallic or amine  
15 catalysts or a mixture thereof are introduced through a third  
16 dedicated line into said mixing head for spray application.

17           21. The process of claim 17 wherein a thermal rise of less  
18 than 30° F is observed.

19           22. The process of claim 17 wherein said polyurethane  
20 applied to said primary backing is flame retardant.

21           23. The process of claim 17 wherein said polyurethane  
22 applied to said primary backing contains 0.5 to 3 parts water  
23 per 100 parts of polyol.

1           24. A method for preparing carpet by annealing a secondary  
2 backing to a greige, having fibers attached to a primary  
3 backing, said process comprising:

4           a) preparing polyurethane by mixing a polyol component and  
5 an isocyanate component at about the same time the components  
6 are introduced into a mixing head for application through a die;

7           b) applying said polyurethane at ambient temperature to  
8 the primary backing side of said greige to form a tacky  
9 polyurethane-coated greige;

10          c) applying steam to the polyurethane coated primary  
11 backing; and

12          d) contacting said secondary backing with the polyurethane-  
13 coated greige to form a carpet.

14          25. The process of claim 24 wherein said polyurethane is  
15 applied to said primary backing at an area concentration of  
16 about 6 to about 40 ounces per square yard.

17          26. The process of claim 24 wherein the filler is present  
18 at a concentration of from about 0 to about 300 parts per 100  
19 parts of polyurethane.

20          27. The process of claim 24 wherein metallic or amine  
21 catalysts or a mixture thereof are introduced into said mixing  
22 head for spray application.

1        28.    The method of claim 1 wherein a thermal rise of less  
2    than 30° F is observed.

3        29.    The method of claim 1 wherein the secondary backing is  
4    a spun bonded fabric.

5